PENGUIN ORTHOTICS | Design Resources

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PA12CF (Nylon 12 with 25% Carbon Fiber)

2mm - Flexible: Prescriber may specify the thickness in 0.1mm increments.

3mm - Semi-flexible: Prescriber may specify the thickness in 0.1mm increments.

4mm - Rigid: Prescriber may specify the thickness in 0.1mm increments to 5mm or more.

LENGTH (PA12-CF Orthotics)

Full foot: The shell is just proximal to the met heads. A flexible extension is added to the full length of the foot.

Sulcus / Web: The shell is just proximal to the met heads. A soft flexible extension is added up to the sulcus so that the MTP joints are covered.

Short (met heads): Usually short dress. Thin orthotics to fit dress shoes.

HEEL CUP DEPTH

These are suggested values.

Prescriber may specify any depth in 0.1mm increments from 0mm to 40mm.

PA12-CF ONLY (Support and stabilization)

Heel stabilizer size: Describes the length of the heel stabilizer. Usually to the centre of gravity.

Heel lift (mm): Shell is printed with the heel lift incorporated into the orthotic (not glued on).

Forefoot post size: Describes teh length of it distal to proximal.

Arch support bars: Describe the number of bar(s). Describe the thickness and the width of the bar(s). You may specify location.

TPU (Thermoplastic Polyurethane)

Soft: Printed **without enclosing side walls**. This makes the orthotic softer. Printed with gyroid infill at 15% density. (Gyroid pattern lattice interior visible.)

Medium: All side walls **are printed**. Printed with gyroid infill at 20% density.

Hard: All side walls **are printed**. Printed with gyroid infill at 30% density.

LENGTH (TPU Orthotics)

Long (full length): The entire orthotic is printed out of TPU. The front part is about 1mm thick extending to the full foot. Prescriber selects the cushioning and/or covering material.

Sulcus / Web: The TPU shell can be printed to cover the MTP joints to the desired thickness or posting (i.e. firm 1-5pmp). The toes part is soft cushioning material and cover material.

Short (met heads): The shell is printed out of TPU. There is no extension, only the TPU shell is covered with your specified material.

STYLE

Sport: Plastic or polyurethane shell. Heel stabilizer on plastic. 2 or 3 mm cushion and top cover (vinyl, etc).

Dress: Short orthotics. Plastic shell without cushion. May have flexible extension to web.

Cobra: The thinnest orthotic we offer, without any thickness under the heel. Moderate arch support. May be extended to web with flexible material.

ADDITIONS

Metatarsal pads: Poron met pads glued on the dorsal aspect of the orthotics.

Heel pads: 3mm poron glued on the dorsal aspect of the orthotics into the heel area, extended just proximal to the cuboid.

Horseshoe pads: Same as above but with a hole to accomodate a heel spur.

Heel lifts (added): Hard EVA glued to the plantar aspect of the orthotics to compensate for leg length discrepancy.

Morton's extension: Glued on the dorsal aspect of the orthotics (3mm poron or as specified).

Reverse Morton's: Glued on the dorsal aspect of the orthotics (3mm poron or as specified).

1-5 PMP: Glued on the dorsal aspect of the orthotics. Full thickness under MTPJs.

STANDARD (Shortcut designs)

2mm: 2mm PA12-CF shell. Medium heel stabilizer. 2mm top cover (cushion plus vinyl).

3mm: 3mm PA12-CF shell. Medium heel stabilizer. 3mm cushion plus a top cover.

4mm: 4mm PA12-CF shell. Medium heel stabilizer. 3mm top cushion plus a top cover.

SANDWICH (Shortcut designs)

Shell: 2, 3 or 4mm PA12-CF shell.

Top: 2mm nyplex or 3mm nyplex.

Bottom: 1mm EVA or 2mm EVA

CUSHION

Spenco/ETC: 2mm black or 3mm black.

V-Foam: 35DURO EVA Foam.

Poron: PPT 30DURO. 1, 2 or 3mm.

Plastazote: 25DURO. 3, 6 or 9mm.

Nyplex: 25DURO. 3, 6 or 6mm. Can be used without top cover.

TOP COVER

Vinyl: Thin, usually black, more durable.

Ultrahyde: More flexible vinyl, black on black flex mesh.

Vinaire: Stronger, breathable vinyl or less flexible base mesh.

Trinidad: More durable, less expensive option.

Ultrasuede: Artificial nylon suede, resembles real suede, durable.

Leather: Polysealed, colour may vary.

SANDAL (Shortcut designs)

TPU: The entire length of the orthotic is printed. The shell and thin bottom are one piece. Corrections and additions can be incorporated into the printed orthotic.

Top: Regular 6mm nyplex without or with a top cover (suede or leather). Patients seem to like the feel of nyplex and it is easy to clean. Can also be 3mm PPT plus 3mm plastazote for diabetic patients.

THIN DRESS (Shortcut designs)

2mm: PA12-CF 2mm shell plus vinyl or leather. (Short or web length).

3mm: PA12-CF 3mm shell plus vinyl or leather. (Short or web length).

4mm: PA12-CF 4mm shell plus vinyl or leather. (Short or web length).

STANDARD TPU (Shortcut designs)

Medium: Medium density TPU. Short shell plus 3mm top cover to full length. Some MLA flange and some MLA skive.

Soft: Soft density (printed without side walls). Short shell plus 3mm cushion to full length. Some MLA flange and some MLA skive.

DIABETIC (Shortcut designs)

Regular: PA12-CF 3mm STD shell, plus 3mm PPT and 3mm plastazote.

Thick: Regular plus extra 3mm cushion. You may specify material.

P3 (Shortcut designs)

TPU P3: Medium density TPU. Short shell plus 3mm PPT, 1-5pmp out of 3mm PPT, met bump, plus 3mm plastazote.

PA-CF P3: PA12-CF 3mm STD shell, plus 3mm PPT, 1-5pmp out of 3mm PPT, met bump, plus 3mm plastazote.